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P. 1

ABSTRACT FOR THE U.S. RENDEZVOUS AND CAPTURE CAPABILITIES REVIEW

Abstract: Flight Support System (FSS) Docking and Umbilical Services Systems

The Satellite Servicing Project at GSFC in the early 80's developed a facility for servicing observatories in orbit when docked on the shuttle. The facility includes a three point docking ring and one or two umbilicals to provide power, data and command capability to docked payloads. This facility was used in the 1984 repair of the Solar Maximum satellite. It will be used for the Hubble repair mission in 1993, and it is planned to be used on the Explorer Platform retrieval mission in 1995 and for servicing AXAF in the late 90's.

The basic three point docking mechanisms and umbilical interfaces were adopted by the OMU Project for that vehicle's remote rendezvous and docking mission capability. This would have assured a common interface for a serviceable payload for either shuttle based or remote servicing, i.e. HST. For OMU remote servicing, quick reaction docking latches were under development when that Project was canceled.

Although there is no remote servicing capability being funded at present, the EOS spacecraft configuration does include three pins compatible with the FSS latches as a contingency planning measure.

A presentation for the 3-day, Williamsburg review, would include:

- a. a complete description of the three point docking configuration
- b. a description of the docking alignment tolerances of the system
- c. a description of the existing electric umbilical configuration, operation, and services available therewith
- d. a description of the refueling umbilical being procured for testing this winter